




# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,023	02/28/2002	Thomas H. Zimmerman	22.1468	2691
35204	7590	12/20/2005		
SCHLUMBERGER RESERVOIR COMPLETIONS			EXAMINER	
14910 AIRLINE ROAD			DANG, HUNG Q	
ROSHARON, TX 77583			ART UNIT	PAPER NUMBER
			2635	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**Application No. 

10/086,023

Applicant(s)

ZIMMERMAN, THOMAS H.

Examiner

Hung Q. Dang

Art Unit

2635

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33,56 and 59-66 is/are allowed.
- 6) ☒ Claim(s) 1-11, 14, 16-24, 28, 29, 39-49, 51-55 and 67-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This communication is in response to applicant's response received on 10/17/2005.

#### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-32, 34-55, 57-59 and 67-69 have been considered but are moot in view of the new ground(s) of rejection.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Safinya et al. U.S. Patent 4,839,644 in view of Jennings U.S. Patent 5,172,112.

**Regarding claims 1 and 40**, Safinya et al. teaches a system for use in a well, comprising at least one wireless network device (column 5 lines 40-57; subsystem 145 is a network device) in the well (Figure 1, unit 115) (column 3 lines 42-45; the downhole transmitter/receiver and antenna are network devices). However, Safinya et al. does not teach **short-range** wireless communication.

Jennings, in the same field of endeavor, teaches a system for use in a well, which uses short-range wireless communication (column 1, lines 50-62) for data transfer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to alternatively provide short-range wireless communication instead of long-range communication to the system disclosed by Safinya et al., as evidenced by Jennings, in order to transmit data.

**Regarding claim 3**, the system disclosed by Safinya et al. also comprises an interlink wireless network device (Figure 4, unit 161) positioned proximal the surface of the well; and a communication line interconnecting the interlink wireless network device to a surface controller (Figure 4, unit 450).

**Regarding claims 4 and 41**, the wireless network device disclosed by Safinya et al. also communicates with a downhole device (Figure 2, unit 210).

**Regarding claim 5**, the downhole device disclosed by Safinya et al. also includes gauges (Figure 2, unit 211-214).

**Regarding claims 6, 7 and 42**, the wireless network device disclosed by Safinya et al. is also in communication with a power source (Figure 2, unit 260), which is a battery.

5. Claims 2, 10, 11, 14, 19-24, 44-46, 51, 67 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Safinya et al. U.S. Patent 4,839,644 in view of Jennings U.S. Patent 5,172,112 in view of Walsh et al. U.S. Patent 6,603,977 .

**Regarding claims 2, 10, 67 and 69**, even though Jennings teaches short range communication, but NOT specifically using a Bluetooth wireless communication, however, one skilled in the art would recognize that Bluetooth wireless communication has been known as a short range type of communication protocol and has been used in many different environments for short-range communication such as communication between two cellular phones, communication between keyboards and computers etc., as evidenced by Walsh et al. (abstract). Therefore, by conventionality, it would have been obvious to one skilled in the art to alternatively substitute the short range communication, disclosed by Jennings, with Bluetooth communication.

**Regarding claims 11, 14, 44-46 and 51**, Safinya et al. also teaches a wireless network device outside the well adapted to communicate with at least one wireless network device in the wellhead (Figure 4).

**Regarding claims 19 and 21-23**, Safinya et al. also teaches a first wireless network device (Figure 4 unit 495) positioned outside a casing in the well; a second wireless network device (Figure 1, unit 145) positioned inside the casing of the well; the first wireless network device and the second wireless network device adapted to communicate with one another.

**Regarding claims 20 and 24**, Safinya et al. also teaches a memory device (Figure 4, processor 450 inherently contains memory) communicating with the first wireless network device.

6. Claims 1, 8, 9, 16-19, 23, 28, 29, 39, 40, 43, 47, 49 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel et al. U.S. Patent 6,192,980 in view of Jennings U.S. Patent 5,172,112 and in further view of Walsh et al. U.S. Patent 6,603,977.

**Regarding claims 1, 39, 40, 47 and 68,** Tubel et al. teaches a system for use in a well comprising at least one wireless network device (Figure 2, unit 22 and column 9 lines 45-51) in the well. However, Tubel et al. does not teach **short-range** wireless communication.

Jennings, in the same field of endeavor, teaches a system for use in a well, which uses short-range wireless communication (column 1, lines 50-62) for data transfer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to alternatively provide short-range wireless communication instead of long-range communication to the system disclosed by Safina et al., as evidenced by Jennings, in order to transmit data.

Even though Jennings teaches short range communication, but NOT specifically using a Bluetooth wireless communication, however, one skilled in the art would recognize that Bluetooth wireless communication has been known as a short range type of communication protocol as evidenced by Walsh et al. (abstract) and, by conventionality, it would have been obvious to one skilled in the art to alternatively substitute the short range communication, disclosed by Jennings, with Bluetooth communication.

**Regarding claims 8 and 43,** Tubel et al. also teaches at least one wireless network device positioned at a lateral branch of a multilateral well (Figure 2, unit 22 is a wireless network device).

**Regarding claims 9 and 23,** Tubel et al. also teaches a first wireless network device (Figure 2, unit 22) positioned in a lateral branch of a multilateral well; a second wireless network device (Figure 1, unit 24) positioned outside the lateral branch in the well; the first wireless network device and the second wireless network device positioned within range of one another.

**Regarding claim 16,** Tubel et al. also teaches at least one secondary communication system (Figure 1, unit 10 or unit 52 and column 13 lines 13-24) in communication with the at least one wireless network device.

**Regarding claim 17,** the secondary communication system disclosed by Tubel et al. is a satellite system (column 13 lines 20-24).

**Regarding claim 18,** the secondary communication system disclosed by Tubel et al. also provides communication between the at least one wireless network device and a location selected from a remote land-based location and an offshore surface location (the communication system 10 shown in Figure 1 is an offshore surface location).

**Regarding claims 28 and 29,** Tubel et al. also teaches at least a portion of the tubing extends through a casing in the well; a third wireless network device (see Figure 2, there are three wireless network devices 22) positioned inside the casing of the well;

the first wireless network device, the second wireless network device, and the third wireless network device are adapted to communicate with one another.

**Claim 19** is rejected for the same reasons as claim 28.

**Regarding claim 49**, Tubel et al. also teaches at least one wireless network device in the well located at a predetermined position as already discussed above. Tubel et al. also teaches an actuation circuitry in the tool adapted to detect a signal from the connected wireless network device to actuate the tool (column 23, lines 60-63).

7. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel et al. U.S. patent 6,192,980 in view of Jennings U.S. Patent 5,172,112 in view of Walsh et al. U.S. Patent 6,603,977 and in further view of MacLeod U.S. Patent 4,578,675.

**Regarding claim 48**, Tubel et al. in view of Jennings and Walsh et al. teaches the method as claimed in claim 47. However, Tubel et al. in view of Jennings and Walsh et al. does not teach determining the depth of a tool in the well using at least one of the wireless network devices.

MacLeod, in the same field of endeavor, teaches a system for use in a well, which includes a depth measuring device for determining the depth of the tool in the well (column 14, lines 53-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a depth correlation circuitry that is adapted to detect a signal from the wireless network device to determine the depth of the tool in the



Art Unit: 2635

well disclosed by Tubel et al. in view of Jennings, as evidenced by MacLeod, in order to determine the depth of the tool in the well.

8. Claims 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jennings U.S. Patent 5,172,112 in view of Head U.S. Patent 6,655,453.

**Regarding claim 52**, Jennings teaches a subsea networking system (abstract) comprising:

A wireless network device positioned in a subsea structure (the device shown in figure 2); and a subsea vehicle (Figure 3, unit 19 and column 2 lines 29-33) having a wireless network device therein that is adapted to communicate with the wireless network device positioned in the subsea structure.

Even though, Jennings does not specifically teach said communication uses RF wireless protocol, however, one skilled in the art would recognize that RF wireless protocol has been commonly used in wireless communication systems, as evidenced by Head (column 7, lines 20-29).

Therefore, by conventionality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide RF wireless protocol to the transmission system disclosed by Jennings, as evidenced by Head, in order to wirelessly transmit data.

**Regarding claim 53**, the subsea structure disclosed by Jennings is also a wellhead (column 2 lines 19-28).

**Regarding claim 54**, the subsea vehicle disclosed by Jennings is also an ROV (column 2 lines 29-33).

**Claim 55** is rejected for the same reasons as claim 52.

***Allowable Subject Matter***

9. Claims 33, 56 and 59-66 are allowed.

**Regarding claim 56**, the prior arts of record fail to teach or disclose a subsea telemetry system as claimed in claim 55, which further comprises a guidance circuitry of the subsea vehicle in communication with the wireless network device of the subsea vehicle, the guidance circuitry adapted to determine the relative position of the subsea vehicle based upon input from the interconnected wireless network device.

**Regarding claims 33 and 60**, the prior arts of record fail to teach or disclose a system as claimed in claims 33 and 60, respectively, which further comprises at least another wireless network device for location in the well, the first wireless network device to perform triangulation of signals to determine relative position of the tool to the second wireless network device and the at least another wireless network device.

**Regarding claim 58**, the prior arts of record fail to teach or disclose the system as claimed in claim 58, wherein the second wireless network device transmits the location code to the first network device.

**Regarding claim 61**, the prior arts of record fail to teach or disclose a system as claimed in claim 61, wherein the second wireless network device sends an actuating

Art Unit: 2635

signal to the first wireless network device for actuating the tool once the tool comes within range of the second wireless network device.

### Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571) 272-3069. The examiner can normally be reached on 9:30AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hung Q. Dang

11/28/2005

H.D.



MICHAEL HORABIK  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

